SILVER

Service Manual

ST888

11-Band Stereo Radio Cassette Recorder

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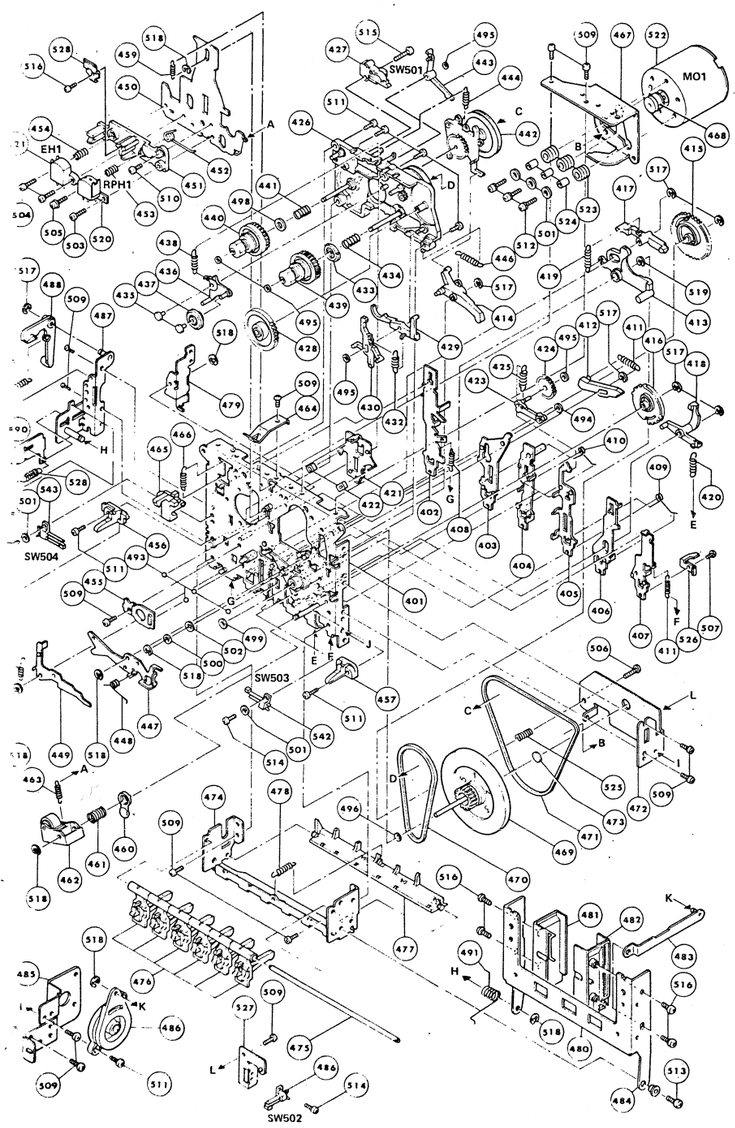
SHIN-SHIRASUNA ELECTRIC CORP., JAPAN

CASSETTE TAPE RECORDER EXPLODED VIEW [MRX11103]



CASSETTE TAPE RECORDER PARTS LIST

[MODEL ST888]

REF. NO.	DESCRIPTION	PART NO.
401	Main Chassis Assembly	KB1028
402	Slider, Rec.	KD1012
403	Slider, Play	KD1011
404	Slider, Rew.	KD1026
405	Slider, F. FWD	KD1014
406	Slider, Stop	KD1008
407	Slider, Pause	KD1027
408	Spring, Rec. Slider	KD6001
409	Spring, F. FWD/Stop Slider	KD6019
410	Spring, Play/Rew. Slider	KD6018
411	Spring, Rec. Lever, Pause Slider	KD6007
412	Rec. Lever	KD3014
413	Arm, Shift (A)	KC3063
414	Arm, Shift (B)	KC3010
415	Assist Gear (A)	KC3015
416	Assist Gear (B)	KC3011
417	Arm, Gear Lock (A)	KD3013
418	Arm, Gear Lock (B)	KC3009
419	Spring, Shift Arm (A)	KD6006
420	Spring, Lock Arm (B)	KD6011
421	Brake	KD1013
422	Brake Shoe	KD4001
423	Arm, F. FWD Idler	KD3048
424	Gear, F. FWD	KD3026
425	Spring, F. FWD Gear	KD6045
426	Reel Base Assembly	KB3047
427(SW501)	Spring Switch, Motor Power	QAS-1129-A
428	Gear, Auto Stop	KD3019
429	Arm, Sensor	KD3020
430	Arm, Auto Stop	KD3021
432	Spring, Auto Stop Arm	KD6003
433	Clutch, Take-Up Reel Spindle	KD3038
434	Spring, Take-Up Reel Spindle	KD6043
435	Bushing	KD3052
436	Arm, Play	KD3062
437	Idler, Play	KD3023
438	Spring, Play Arm	KD6023
439	Take-Up Reel Spindle	KD3033
440	Supply Reel Spindle	KD3032
441	Spring, Supply Reel Spindle	KD6024
442	Pulley Arm Assembly, F. FWD/Rew.	KD3067
443	Arm, Rew.	KD3037
444	Spring, Pulley Arm Assembly	KD6030
445	Spring, Flywheel Bracket	KD6008
446	Spring, Shift Arm (B)	KD6012
447	Arm, Auto Lock	KD1005
448	Spring, Auto Lock Arm	KD6016
449	Arm, F. FWD/Rew. Lock	KD1004
450	Sub Chassis	KC1002
451	Head Base	KC3001
452	Spring, Head Base	KD6041
453	Spring, Rec./Play Head	KD6009
454	Spring, Erase Head	G46084
455	Leaf Spring, Sub Chassis	KD1003
456	Guide, Cass.	KC3040
457	Guide, Cass.	KC3039
458	Spring, F. FWD/Rew. Lock	KD6026
459	Spring, Brake	KD6021
460	Cam, Pause	KC3003
461	Spring, Pause Cam	KD6027
462	Pinch Roller Assembly	KD3046
463	Spring, Pinch Roller	KD6002
464	Leaf Spring, Cass.	KD1025
465	Lever, Rec. Safety	KD3007

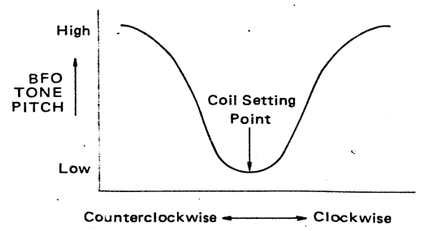
[MODEL S

REF. NO.	DESCRIPTION	PART NO.
466	Spring, Rec. Safety Lever	KD6013
467	Motor Bracket	KD1024
468	Motor Pulley	KD2030
469	Flywheel	KD5001
470	Belt, Sub	KD4004
471	Belt, Main	KD4023
472	Flywheel Bracket	KD1009
473	Spacer, Capstan	KD8003
474	Bracket, Push Button	KC1023
475	Shaft, Push Button	KD2031
476	Push Button, Rec., Rew., F. FWD, Play, Stop, Pause	KC3045
477	Cam, Button Lock	KC3044
478	Spring, Lock Cam	KD6025
479	Lever, Rec.	KD1038
480	Holder, Cass. Compartment Slot	KC1090
481	Holder, Cass.	KD3049
482	Holder, Cass.	KD3050
483	Link Assembly, Damper	KD1041
484	Collar, Cass. Compartment Slot Holder	KD2034
485	Bracket, Damper	KD1109
486	Damper Assembly	JD3079
487	Bracket Assembly, Eject	KD1042
488	Arm, Cass. Compartment Slot Holder	KD3051
489	Slider, Eject	KD1033
490	Spring, Cass. Compartment Slot Lock Arm	JD6015
491	Spring, Cass. Holder	KD6022
493	Steel Ball (2.0φ)	SB2.0
494	Non-Metal Washer (1.2φ x 5.0φ x 0.25t)	KD8010
495	Non-Metal Washer (1.7φ x 3.5φ x 0.25t)	KD8004
496	Non-Metal Washer (2.6φ x 4.7φ x 0.25t)	W2.6x4.7x0
498	Non-Metal Washer (4.7φ x 9.0φ x 0.5t)	W4.7x9.0x0
499	Non-Metal Washer (2.4φ x 5.0φ x 0.5t)	W2.4x5.0x0
500	Non-Metal Washer (3.1φ x 7.0φ x 0.2t)	KD8009
501	Metal Washer (2.6φ x 7.5φ x 0.5t)	PW2.6x7.5x
502	Metal Washer (3.2φ x 7.0φ x 0.5t)	PW3.2x7.0x
503	Screw (2 x 8mm)	KD8005
504	Screw (2 x 8.5mm)	KD8011
505	Special Screw (2 x 9mm)	KD8007
507	Screw (2.6 x 10mm)	PS2.6x10
509	Screw (2.6 x 4mm)	TTS2.6x4
510	Screw (2.6 x 4mm), Black	TTS2.6x4
511	Screw (2.6 x 6mm)	TTS2.6x6
512	Screw (2.6 x 8mm), Black	TTS2.6x8
513	Screw (2.6 x 8mm)	TTS2.6x8
514	Screw (2.6 x 6mm)	TTS2.6x6
515	Self-Tapping Screw (2 x 12mm)	STS2x12
516	Self-Tapping Screw (2.6 x 6mm)	STS2.6x6
517	E-Stop Ring (2.0φ)	ES2.0
518	E-Stop Ring (2.5φ)	ES2.5
519	E-Stop Ring (4.0φ)	ES4.0
520(RPH1)	Rec./Play Head	5874-2321
521(EH1)	Erase Head	5873-1218
522(MO1)	DC Motor	4311-2A1
524	Protector, Head	KD1044-
525	Self-Tapping Screw (2 x 6mm)	STS2x6
526	Bracket, Switch	KD1091
527(SW502)	Spring Switch, Pause	LSA-1119
528	Spring, Eject Slider	KD6001
530	Bushing, DC Motor	G44020
531	Collar, Bushing	G42282
532	Screw (2.6 x 8mm)	S2.6x8
533	Metal Washer (2.6φ)	MW2.6
542(SW503)	Spring Switch, F. FWD/Rew.	LSA-1123
543(SW504)	Spring Switch, Play	LSC-1223

BFO ALIGNMENT

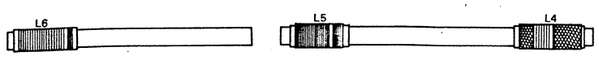
General: Set BFO pitch control to mechanical center.

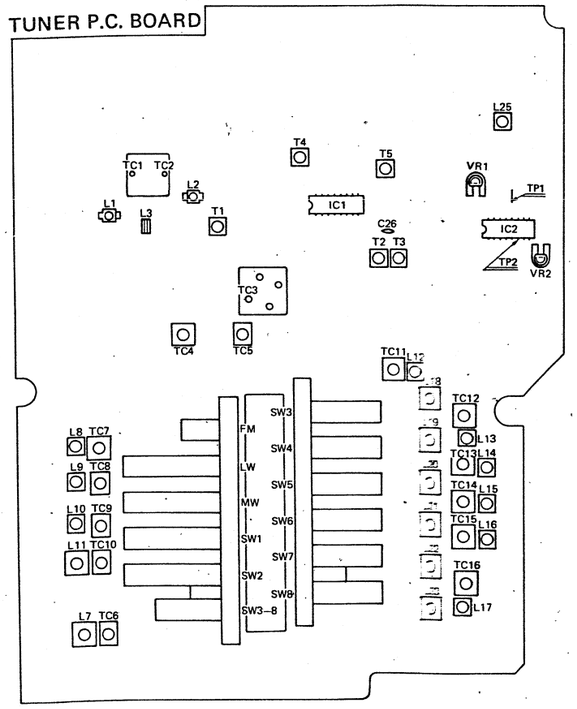
Step	Connect Signal Source To—	Connect Output Indicator To—	Set Signal Generator To—	Set Radio Dial To—	Adjust—	Adjust For—	Step
1	Loop of several turns of wire connected across generator leads. Place loop close to the SW1 antenna (L6).	AC V.T.V.M. across external speaker jack	Nearly 455 kHz AM Mod.	Tuning gang closed	Frequency of Signal Generator	Maximum output on V.T.V.M.	1
2	BFO switch to ON position.						2
3	Same as above	Same as above	Signal Generator Set Point	Same as above	L25	Coil setting point (Fig. A)	3

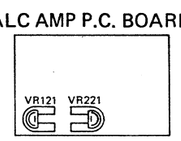


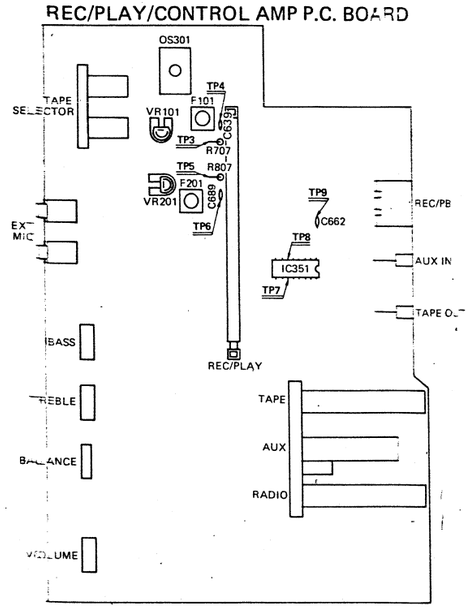
(Fig. A)

ALIGNMENT POINTS









CASSETTE TAPE RECORDER ADJUSTMENT

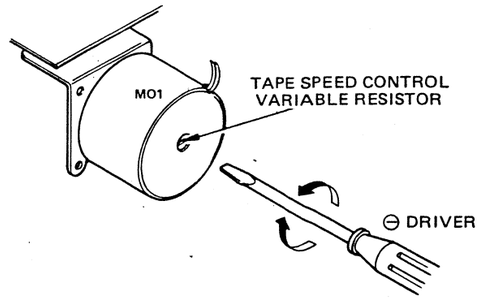
General:

1. Tape Selector Switch is NORMAL position.
2. Volume Control is at maximum.
3. Balance Control is at mechanical center.
4. Bass and Treble Control is at mechanical center.
5. Function Selector Switch is TAPE position.

TAPE SPEED ADJUSTMENT

Equipment Required: Frequency Counter and 3 kHz Test Tape (TEAC MTT-111D)

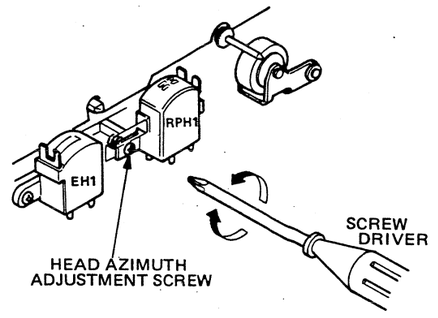
1. Connect frequency counter to either left or right external speaker jack (J351 or J352).
2. Play back the test tape and adjust the variable resistor built in the DC motor for 3 kHz (±2%). In this adjustment, use the central portion of the test tape.



HEAD AZIMUTH ADJUSTMENT

Equipment Required: Dual Channel AC V.T.V.M. and 10 kHz Test Tape (TEAC MTT-114)

1. Connect dual channel AC V.T.V.M. to both left and right external speaker jacks (J351 and J352).
2. Play back the "A" side of the test tape and adjust Head Azimuth Adjustment Screw so that the output indicated by the AC V.T.V.M. will be maximum and the difference of output between left and right becomes less than 2 dB.
3. Play back the "B" side of the test tape and adjust Head Azimuth Adjustment Screw for maximum output.
4. Repeat steps 2 and 3, and adjust Head Azimuth Adjustment Screw until the difference of outputs from side "A" and side "B" becomes less than 2 dB.



RECORD BIAS FREQUENCY ADJUSTMENT

Equipment Required: Frequency Counter

1. Set the tape selector switch to NORMAL position.
2. Place the RIS switch to 2 position.
3. Connect frequency counter to TP3 and TP4.
4. Set the unit to recording mode.
5. Adjust OS301 for a reading of 85 kHz on the frequency counter.

RECORD BIAS LEVEL ADJUSTMENT

Equipment Required: Dual Channel AC V.T.V.M.

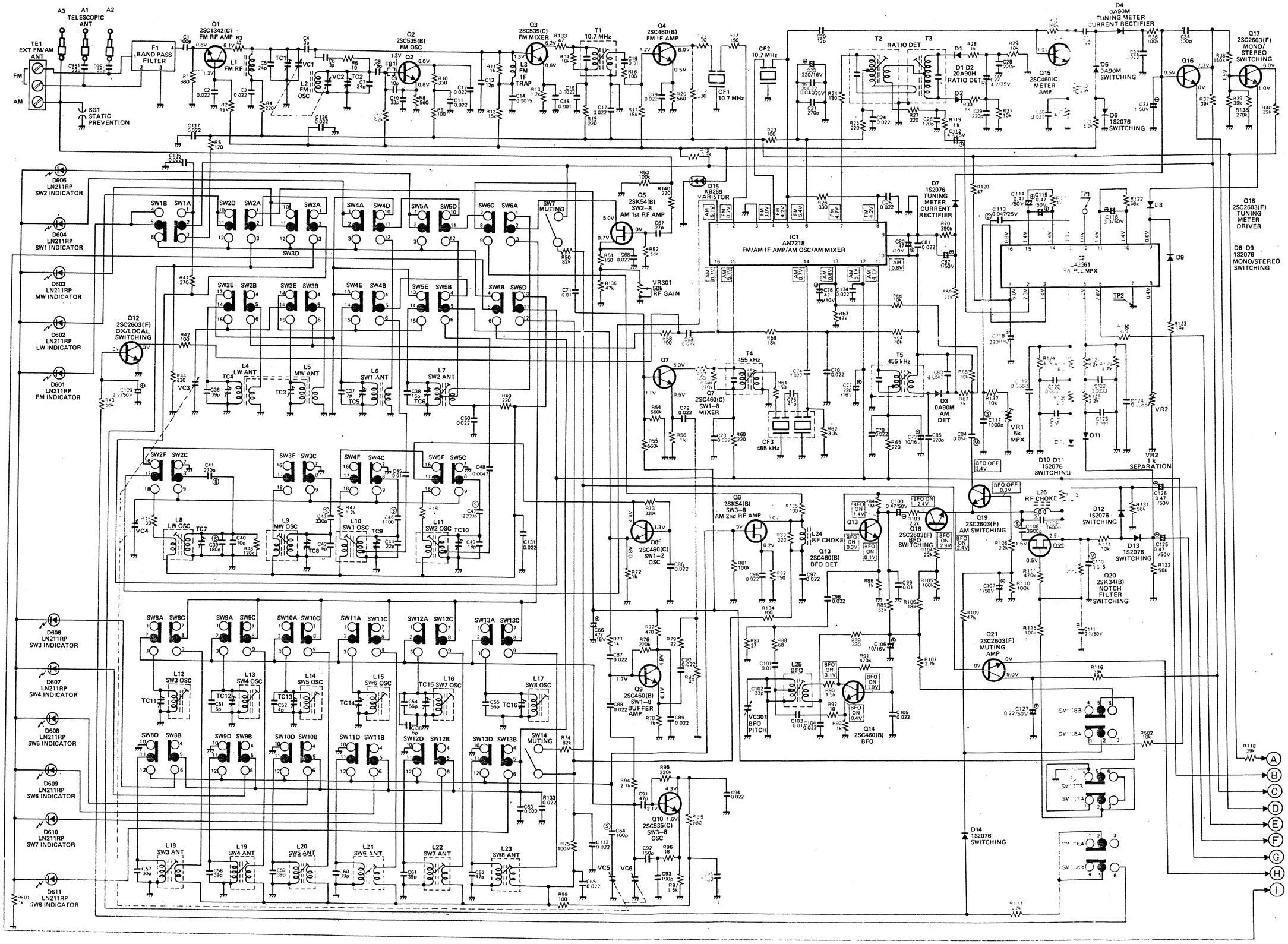
1. Set the tape selector switch to NORMAL position.
2. Connect dual channel AC V.T.V.M. to TP3, TP4, TP5 and TP6.
3. Set the unit to recording mode.
4. Adjust VR101 (left) and VR201 (right) so that the AC V.T.V.M. reads 16 mV.

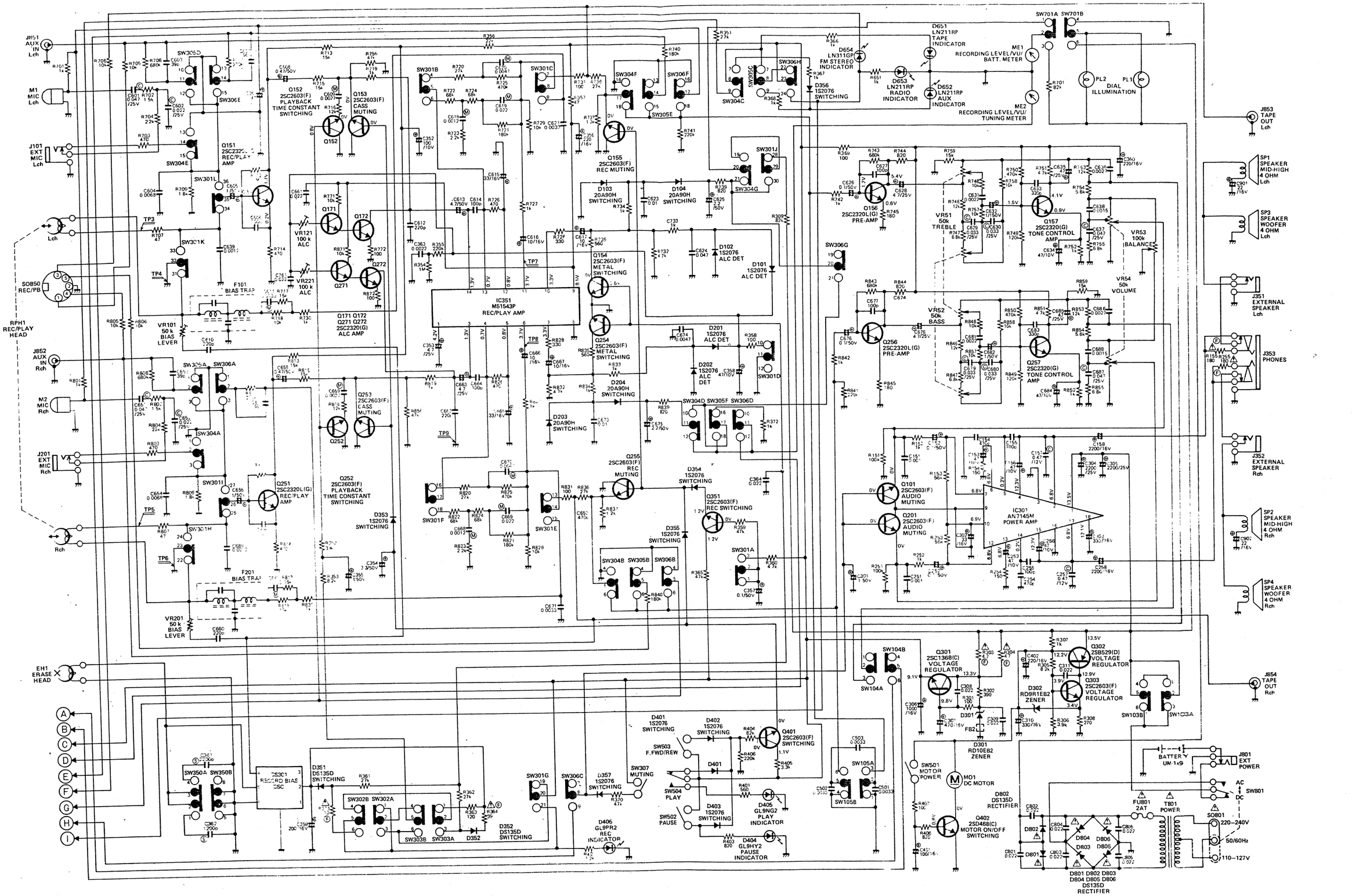
ALC BALANCE ADJUSTMENT

Equipment Required: Dual Channel AC V.T.V.M and Audio Signal Generator

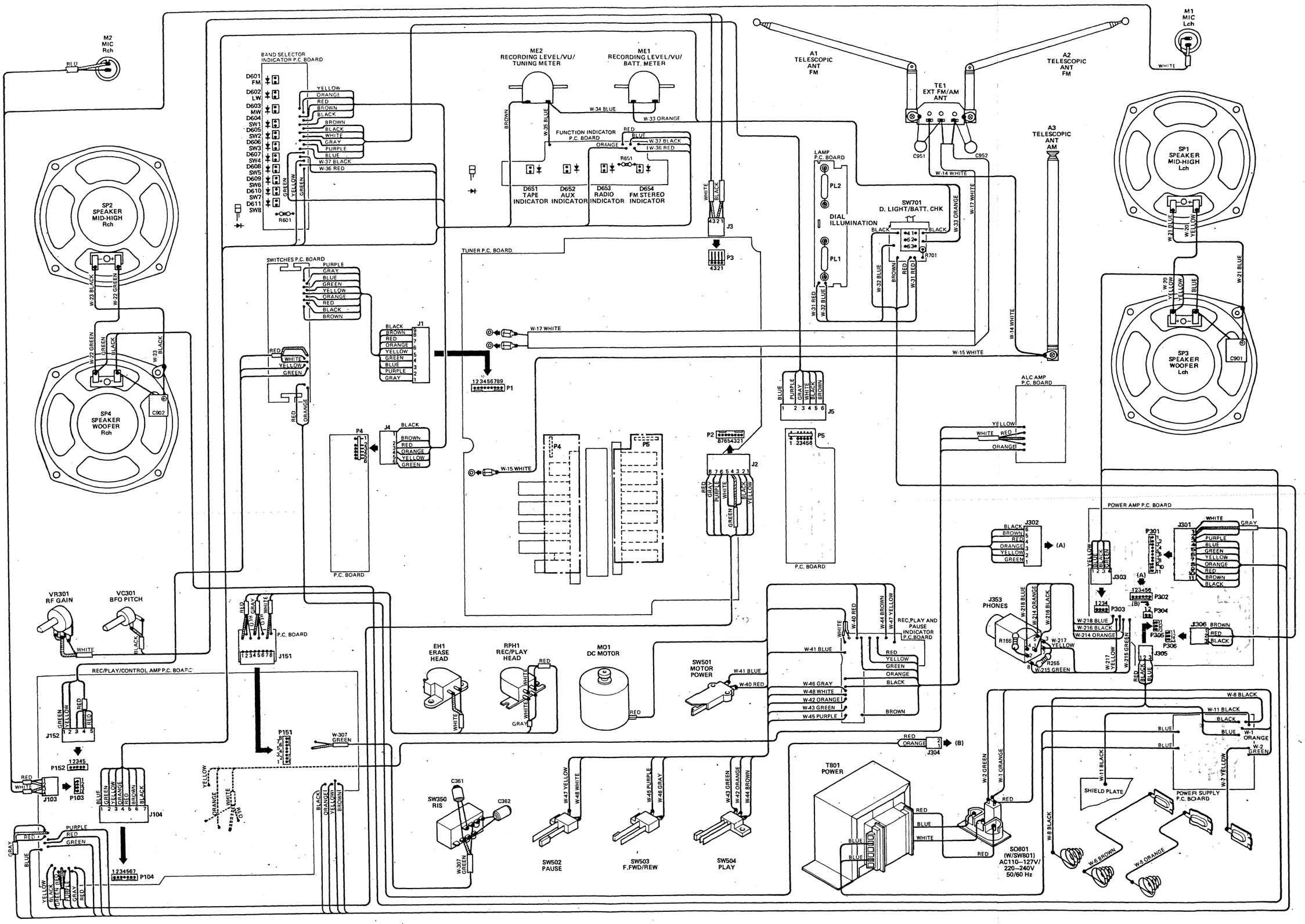
1. Connect dual channel AC V.T.V.M. to TP7, TP8 and TP9.
2. Connect the audio signal generator to both left and right ext. mic. jacks (J101 and J201) and apply 10 mV 1000 Hz signal.
3. Set the unit to recording mode.
4. Adjust VR121 (left) and VR221 (right) for equal reading on both left (TP7) and right (TP8) channels AC V.T.V.M.

SCHEMATIC DIAGRAM

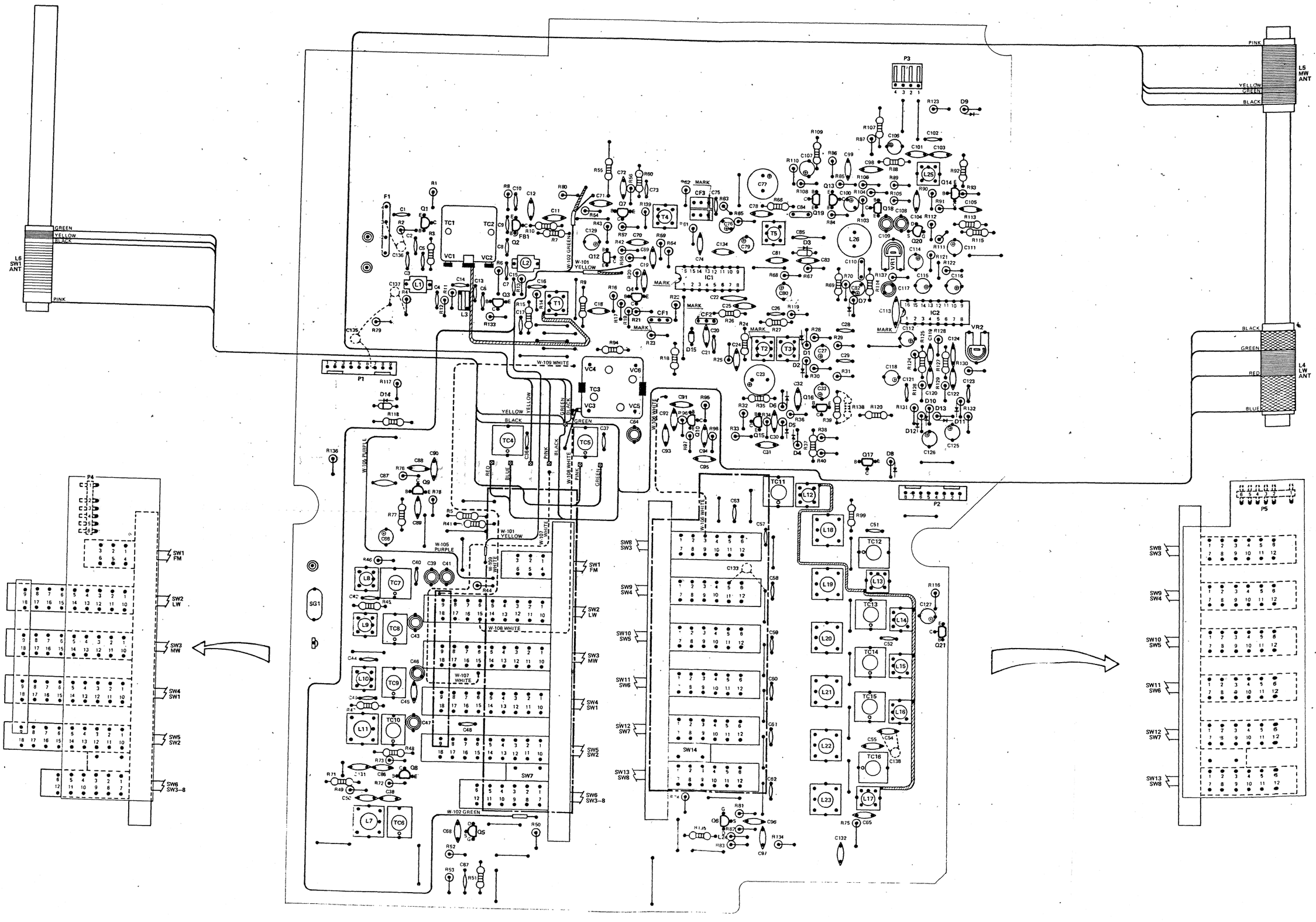



J851 AUX IN Lch
M1 MIC Lch
J101 EXT MIC Lch
Lch
SO850 REC/PB
RPH1 REC/PLAY HEAD
J852 AUX IN Rch
M2 MIC Rch
J201 EXT MIC Rch
Rch
EH1 ERASE HEAD
Q152 2SC2603(F) PLAYBACK TIME CONSTANT SWITCHING
Q153 2SC2603(F) CASS MUTING
Q151 2SC2320(G) REC/PLAY AMP
Q171 Q172 Q271 Q272 2SC2320(G) ALC AMP
IC351 M51543P REC/PLAY AMP
Q154 2SC2603(F) METAL SWITCHING
Q155 2SC2603(F) REC MUTING
Q252 2SC2603(F) PLAYBACK TIME CONSTANT SWITCHING
Q253 2SC2603(F) CASS MUTING
Q251 2SC2320L(G) REC/PLAY AMP
Q255 2SC2603(F) REC MUTING
Q351 2SC2603(F) REC SWITCHING
D651 LN211RP TAPE INDICATOR
D654 LN311GP FM STEREO INDICATOR
D653 LN211RP RADIO INDICATOR
D652 LN211RP AUX INDICATOR
D356 1S2076 SWITCHING
ME1 RECORDING LEVEL/VU/ BATT. METER
ME2 RECORDING LEVEL/VU/ TUNING METER
PL2 DIAL ILLUMINATION
PL1
J853 TAPE OUT Lch
J854 TAPE OUT Rch
SP1 SPEAKER MID-HIGH 4 OHM Lch
SP3 SPEAKER WOOFER 4 OHM Lch
SP2 SPEAKER MID-HIGH 4 OHM Rch
SP4 SPEAKER WOOFER 4 OHM Rch
J351 EXTERNAL SPEAKER Lch
J353 PHONES
J352 EXTERNAL SPEAKER Rch
VR101 50 k BIAS LEVER
VR121 100 k ALC
VR221 100 k ALC
VR201 50 k BIAS LEVER
VR51 50k TREBLE
VR52 50k BASS
VR53 100k BALANCE
VR54 50k VOLUME
Q156 2SC2320L(G) PRE-AMP
Q256 2SC2320L(G) PRE-AMP
Q157 2SC2320(G) TONE CONTROL AMP
Q257 2SC2320(G) TONE CONTROL AMP
Q101 2SC2603(F) AUDIO MUTING
Q201 2SC2603(F) AUDIO MUTING
IC301 AN7145M POWER AMP
Q301 2SC1368(C) VOLTAGE REGULATOR
Q302 2SB529(D) VOLTAGE REGULATOR
Q303 2SC2603(F) VOLTAGE REGULATOR
D302 RD9R1EB2 ZENER
D301 RD10EB2 ZENER
FB2
D101 1S2076 ALC DET
D102 1S2076 ALC DET
D103 20A90H SWITCHING
D104 20A90H SWITCHING
D201 1S2076 ALC DET
D202 1S2076 ALC DET
D203 20A90H SWITCHING
D204 20A90H SWITCHING
D351 DS135D SWITCHING
D352 DS135D SWITCHING
D353 1S2076 SWITCHING
D354 1S2076 SWITCHING
D355 1S2076 SWITCHING
D357 1S2076 SWITCHING
D401 1S2076 SWITCHING
D402 1S2076 SWITCHING
D403 1S2076 SWITCHING
D404 GL9HY2 PAUSE INDICATOR
D405 GL9NG2 PLAY INDICATOR
D406 GL9PR2 REC INDICATOR
Q401 2SC2603(F) SWITCHING
Q402 2SD468(C) MOTOR ON/OFF SWITCHING
D801 D802 D803 D804 D805 D806 DS135D RECTIFIER
D802 DS135D RECTIFIER
MO1 DC MOTOR
SW501 MOTOR POWER
SW502 PAUSE
SW503 F.FWD/REW
SW504 PLAY
SW307 MUTING
SW801
J801 EXT POWER
BATTERY UM-1×9
FU801 2AT
T801 POWER
SO801
220–240V
50/60Hz
110–127V
TP3
TP4
TP5
TP6
TP7
TP8
TP9
F101 BIAS TRAP
F201 BIAS TRAP

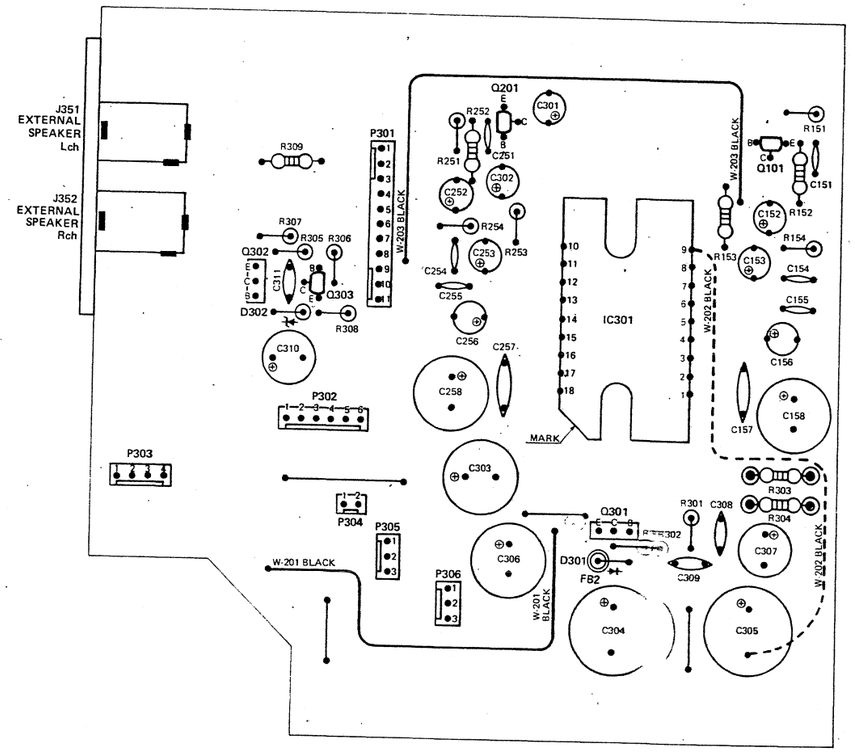
WIRING DIAGRAM



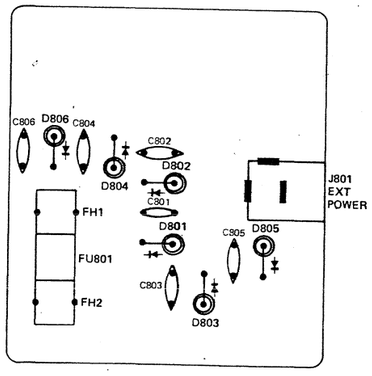
TUNER P.C.BOARD



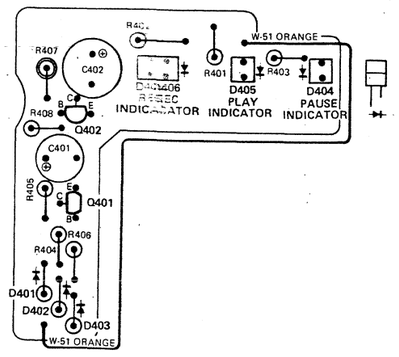
POWER AMP. P.C. BOARD



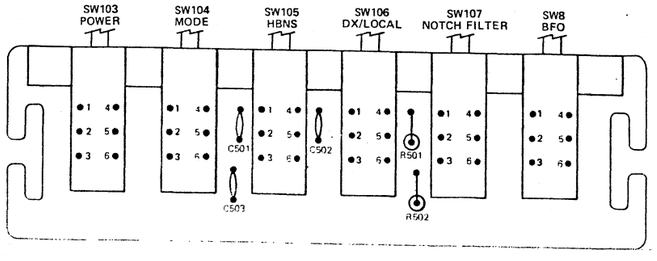
POWER SUPPLY P.C. BOARD



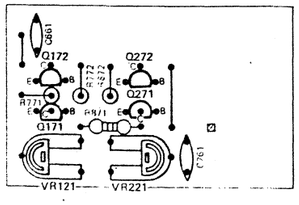
REC, PLAY AND PAUSE INDICATOR P.C. BOARD



SWITCHES P.C. BOARD



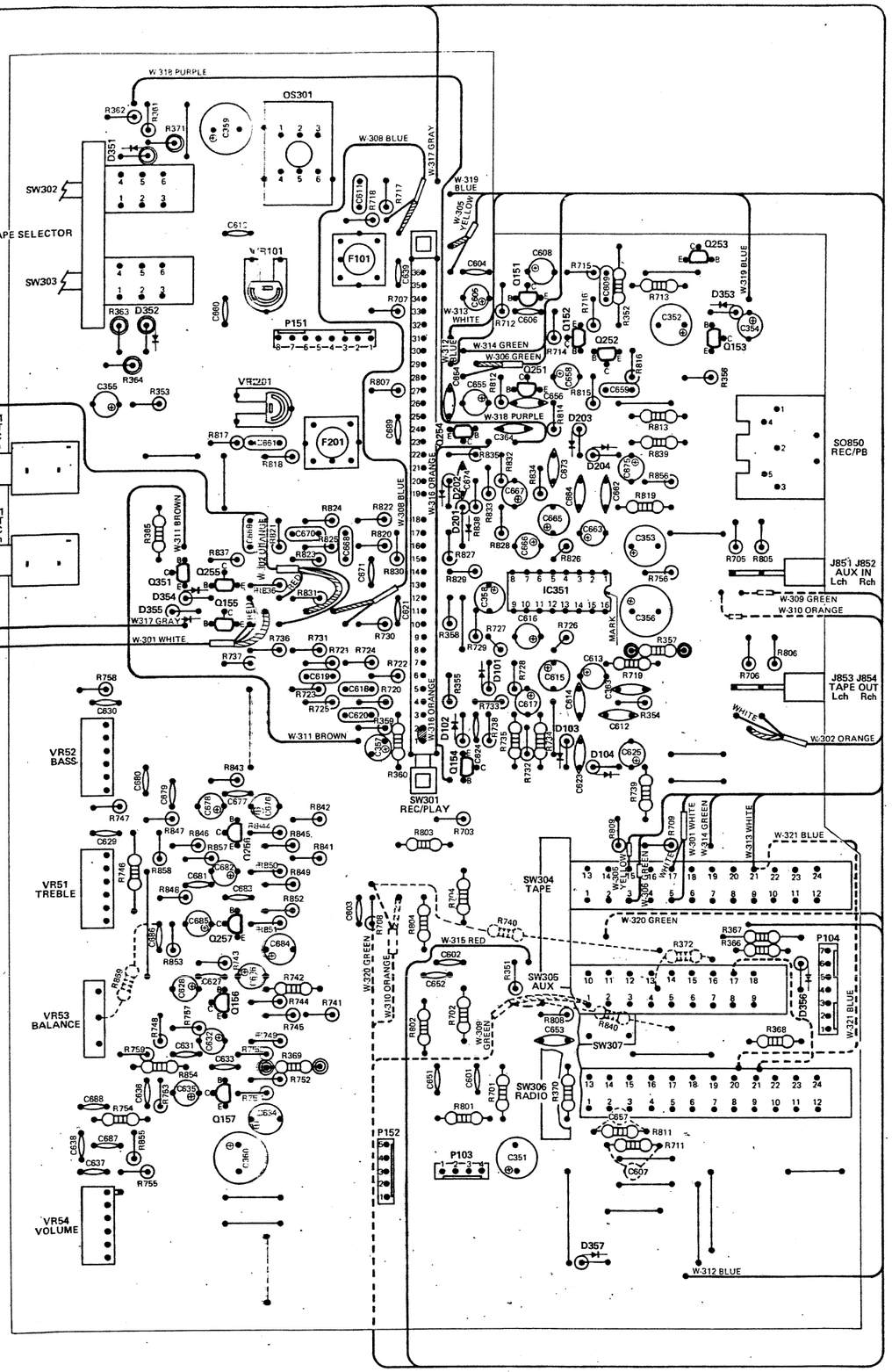
ALC AMP. P.C. BOARD



[MODEL ST888]

SER. NO.	REF. NO.	DESCRIPTION	PART NO.
		MISCELLANEOUS	
120	A1,2	Telescopic Antenna, FM Antenna	1392-0700123
122	A3	Telescopic Antenna, AM Antenna	1392-1000126
153	CF1,2	Ceramic Filter, FM IF (10.7 MHz)	5671-0136Y
154	CF3	Ceramic Filter, AM IF (455 kHz)	5671-0338G
112	EH1	Erase Head	5873-1218
152	F1	LC Components, Band Pass Filter	5214-4
116	F101,201	LC Components, Bias Trap	5214-31
151	FB1	Ferrite Bead, Q2	5597-4
128	FB2	Ferrite Bead, D301	5597-3
519	FH1,2	Fuse Holder	4472-414
⚠526	FU801	Fuse, 2AT	5732-20202
609	J1	Connector with Lead Wire (9-pin, Female)	4163-11865
155	J2	Connector with Lead Wire (8-pin, Female)	4163-11765
154	J3	Connector with Lead Wire (4-pin, Female)	4163-11365
552	J4	Connector with Lead Wire (6-pin, Female)	4163-00178
553	J5	Connector with Lead Wire (6-pin, Female)	4163-00278
124	J101,201	Jack, Ext. Mic.	4451-0045
513	J103	Connector with Lead Wire (4-pin, Female)	4163-11265
546	J104	Connector with Lead Wire (7-pin, Female)	4163-11665
594	J151	Connector (8-pin, Female)	4443-087125
608	J152	Connector with Lead Wire (5-pin, Female)	4163-11465
156	J301	Connector with Lead Wire (11-pin, Female)	4163-11965
591	J302	Connector with Lead Wire (6-pin, Female)	4163-11565
510	J303	Connector with Lead Wire (4-pin, Female)	4163-11165
607	J304	Connector with Lead Wire (2-pin, Female)	4163-10865
528	J305	Connector with Lead Wire (3-pin, Female)	4163-10965
535	J306	Connector with Lead Wire (3-pin, Female)	4163-11065
115	J351/352	2-Pin Jack, External Speaker	4452-0111
117	J353	Jack, Phones	4451-00138
520	J801	Jack, External Power	4451-00124
122	J851/852/853/ 854/SO850	Terminal, Aux. In/Tape Out/Rec.–PB	4215-47
512	M1,2	Electret Microphone	5896-E015
540	ME1,2	Meter, Recording Level VU/Batt./Tuning	4323-0144
110	MO1	DC Motor	4311-2A147
114	OS301	Complex, Record Bias Osc.	6171-0503
149	P1	Connector (9-pin, Male)	4443-097114
148	P2	Connector (8-pin, Male)	4443-087114
146	P3	Connector (4-pin, Male)	4443-044116
147	P4,5	Connector (6-pin, Male)	4443-060161
149	P103	Connector (4-pin, Male)	4443-047114
151	P104	Connector (7-pin, Male)	4443-077114
152	P151	Connector (8-pin, Male)	4443-087114
150	P152	Connector (5-pin, Male)	4443-057114
126	P301	Connector (11-pin, Male)	4443-117114
125	P302	Connector (6-pin, Male)	4443-067114
124	P303	Connector (4-pin, Male)	4443-047114
122	P304	Connector (2-pin, Male)	4443-027114
127	P305	Connector (3-pin, Male)	4443-03RE14
123	P306	Connector (3-pin, Male)	4443-037114
538	PL1,2	Lamp, Dial Illumination	5731-1500141
113	RPH1	Rec./Play Head	5874-2321
207	SG1	Spark Gap, Static Prevention	5481-1
⚠516	SO801	Ext. AC Socket (w/Switch)	4474-91
506	SP1,2	Speaker, 120 mm, 4 ohm, Dynamic, Mid-High	5811-C1200133
508	SP3,4	Speaker, 120 mm, 4 ohm, Dynamic, Woofer	5811-C1200134
144	SW1–7	Push Switch, Band Selector	4431-06300354
143	SW8–14	Push Switch, Band Selector	4431-06240254

REC./PLAY/CONTROL AMP. P.C. BOARD



SER. NO.	REF. NO.	DESCRIPTION	PART NO.
125	D6,7,8,9,10,11,12, 13,14,101,102, 201,202,353,354, 355,356,357,401, 402,403	Diode, Switching, Tuning Meter Current Rectifier, Mono/Stereo Switching, Switching, ALC Det., Switching	5631-1S2076
127	D15	Varistor	5641-KB269
113	D301	Zener Diode	5635-RD10EB2
112	D302	Zener Diode	5635-RD9R1EB2
112	D351,352	Diode, Switching	5632-DS135D
575	D404	Light Emitting Diode, Pause Indicator	5637-GL9HY2
574	D405	Light Emitting Diode, Play Indicator	5637-GL9NG2
573	D406	Light Emitting Diode, Rec. Indicator	5637-GL9PR2
543	D601,602,603,604, 605,606,607,608, 609,610,611,651, 652,653	Light Emitting Diode, Band Selector Indicators, Tape Indicator, Aux. Indicator, Radio Indicator	5637-LN211RP
544	D654	Light Emitting Diode, FM Stereo Indicator	5637-LN311GP
⚠522	D801,802,803,804, 805,806	Diode, Rectifier	5632-DS135D

COILS AND TRANSFORMERS

161	L1	Coil, FM RF	5942-00215
162	L2	Coil, FM Osc.	5942-00320
160	L3	Coil, FM IF Trap	5991-7065
135	L4/5	Ferrite Bar Antenna, LW/MW Antenna	5913-111
139	L6	Ferrite Bar Antenna, SW1 Antenna	5914-25
187	L7	Coil, SW2 Antenna	5943-01412
172	L8	Coil, LW Osc.	5922-0348
173	L9	Coil, MW Osc.	5922-0128
174	L10	Coil, SW1 Osc.	5922-0358
177	L11	Coil, SW2 Osc.	5923-02015
179	L12	Coil, SW3 Osc.	5932-0139
180	L13	Coil, SW4 Osc.	5932-0149
181	L14	Coil, SW5 Osc.	5932-0159
182	L15	Coil, SW6 Osc.	5932-0169
183	L16	Coil, SW7 Osc.	5932-0179
184	L17	Coil, SW8 Osc.	5932-0189
184B	L17	Coil, SW8 Osc. [West Germany version]	5932-0209
189	L18	Coil, SW3 Antenna	5933-00125
190	L19	Coil, SW4 Antenna	5933-00225
191	L20	Coil, SW5 Antenna	5933-00325
192	L21	Coil, SW6 Antenna	5933-00425
193	L22	Coil, SW7 Antenna	5933-00525
194	L23	Coil, SW8 Antenna	5933-00625
194B	L23	Coil, SW8 Antenna [West Germany version]	5933-00725
157	L24	Coil, RF Choke	5995-4R7233
175	L25	Coil, BFO	5922-0368
158	L26	Coil, RF Choke	5995-204228
167	T1	Transformer, FM IF (10.7 MHz)	5562-0048
169	T2	Transformer, Ratio Det.	5572-0026D
170	T3	Transformer, Ratio Det.	5572-0016E
164	T4	Transformer, AM IF (455 kHz)	5552-01310
165	T5	Transformer, AM IF (455 kHz)	5552-00210
⚠515	T801	Transformer, Power	5584-001254